

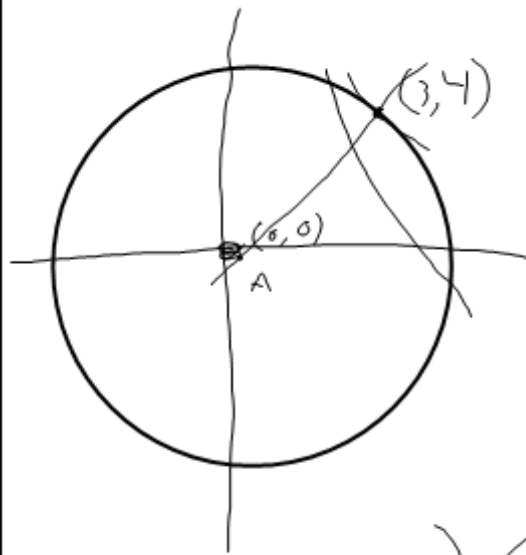
(40)

$$\frac{x}{c} + \frac{y}{d} = 1$$

(a) $x = \text{int}$ $y = 0$ $\longrightarrow \frac{x}{c} + \frac{0}{d} = 1$ $x = c$ so $c = x = \text{int}$

$y = \text{int}$ $x = 0$ $\longrightarrow \frac{0}{c} + \frac{y}{d} = 1$ $y = d$ so $d = y = \text{int}$

(b) $\frac{x}{c} + \frac{y}{d} = 2$ $x = \text{int}$ $\frac{0}{c} + \frac{y}{d} = 2$ so $y = 2d$ or $d = \frac{1}{2} y = \text{int}$
 same w/ $x + c$ $c = \frac{1}{2} x = \text{int}$



$$\frac{\Delta y}{\Delta x} = \frac{4-0}{3-0} = \frac{4}{3}$$

Line A $y = \frac{4}{3}x$

Line B: $y = -\frac{3}{4}(x-3) + 4$

1.3

- Exponential Equations

$$y = a b^x$$

$x \rightarrow$ time
 $a \rightarrow$ initial value
 $b \rightarrow$ base (rate of growth)

- Laws of exponents

- $\frac{1}{2}$ life

- $e \rightarrow \lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x$

- P_{ert}

1.5

- one-to-one

- inverse
 - alg.

- graphically

- numerically

- logs - natural / common

$$y = \log_a x$$

- properties of logs

- $7^x = 47$

$$\log_7 47 = x$$

$$x = \frac{\log 47}{\log 7}$$

1.6

- def of 6 Trig functions

- Period $P = \frac{2\pi}{b}$

$$y = a \sin [b(x-c)] + d$$

- even / odd functions

- graph

- inverse trig functions

- Deg / radians

Basic Trig

$$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{y}{r}$$

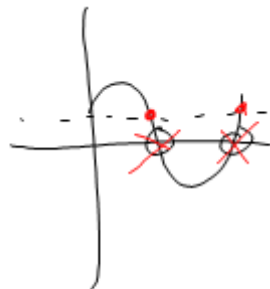
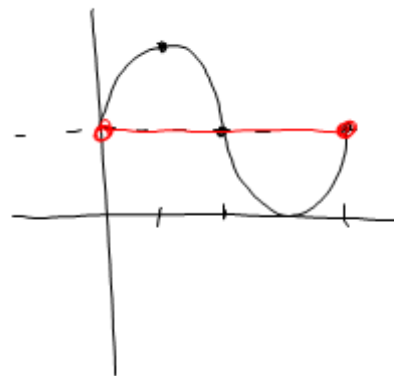
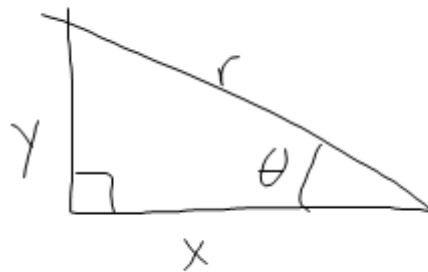
$$\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{x}{r}$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{y}{x}$$

$$\csc \theta = \frac{\text{hyp}}{\text{opp}} = \frac{r}{y}$$

$$\sec \theta = \frac{\text{hyp}}{\text{adj}} = \frac{r}{x}$$

$$\cot \theta = \frac{\text{adj}}{\text{opp}} = \frac{x}{y}$$



Graphing

$$y = a \sin[b(x - c)] + d$$

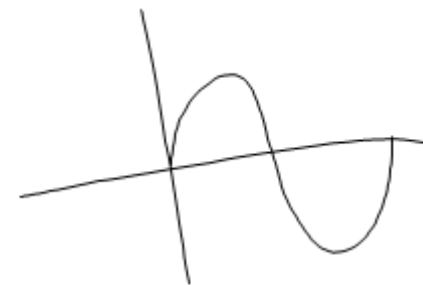
\downarrow amplitude \downarrow frequency \downarrow horz shift
 vert. shift

$a = \frac{1}{2}$ dist. from highest pt to lowest

$$b = \frac{2\pi}{\text{Per.}}, \quad \text{Per.} = \frac{2\pi}{b}$$

$c =$ start of graph

$d =$ becomes new midline



Sect. 1.3 #7, 12, 13-18, 20, 24-27, 38

1.5 #1, 3, 20, 33, 34, [#]35, ^A38, 39, 46

1.6 #9, 11-14, 24